

Exhibit 1

Page 1

1 UNITED STATES DISTRICT COURT
2 IN AND FOR THE DISTRICT OF WYOMING

3 Case No. 2:23-cv-00118-NDF

4 STEPHANIE WADSWORTH, Individually and as
5 Parent and Legal Guardian of W.W., K.W, G.W,
6 and L.W., minor children, and MATTHEW WADSWORTH,

7 Plaintiffs,

8 vs.

9 WALMART, INC. and JETSON ELECTRIC BIKES, LLC,

10 Defendants.

11 -----
12 VIDEO DEPOSITION OF BRIAN N. STRANDJORD, PE, CFI, CFEI
13 November 27, 2024
14 -----
15 -----

16 APPEARANCES:

17 ON BEHALF OF THE PLAINTIFFS:

18 T. MICHAEL MORGAN, ESQ.
19 Morgan & Morgan, P.A.
20 20 North Orange Avenue, Suite 1600
21 Orlando, Florida 32801
22 Phone: 407-420-1414
23 Email: mmorgan@forthepeople.com
24 (Via Zoom)

25 ON BEHALF OF THE DEFENDANTS:

18 EUGENE M. LaFLAMME, ESQ.
19 McCoy Leavitt Laskey LLC
20 N19 W24200 Riverwood Drive, Suite 125
21 Waukesha, Wisconsin 53188
22 Phone: 262-522-7026
23 Email: elaflamme@mlllaw.com

24 Also Present: Julie Butcher, Videographer
25 Peter Curran, Concierge-Tech (Via Zoom)
 Angela Kelsey-Flowers (Via Zoom)

<p style="text-align: right;">Page 10</p> <p>1 A That was at the University of Colorado. 2 Q They have special classes at the University 3 of Colorado that teach about how fire will interact 4 with specific electrical conductors?</p> <p>5 A They have -- they have classes which I -- 6 which I took as part of my education involving heat 7 transfer and thermodynamics and materials science, 8 which are all applicable to that.</p> <p>9 Q But no specific training on how fire 10 interacts with electrical conductors at the University 11 of Colorado; is that fair?</p> <p>12 A Not at the university.</p> <p>13 Q Okay. Where did you obtain that specific 14 training?</p> <p>15 A That specific training was through my 16 employment over approximately the last ten years, in 17 forensics.</p> <p>18 Q When you say, "forensics," can you explain 19 what that means.</p> <p>20 A Sure. That would be investigating 21 different failures -- fires, explosions, accidents -- 22 and explaining that -- using science and engineering 23 to help explain what happened to my clients.</p> <p>24 Q Okay. And when we say, "the last ten 25 years," are we starting that forensic work and this</p>	<p style="text-align: right;">Page 12</p> <p>1 mapping from both International Association of Arson 2 Investigators training and National Association of 3 Fire Investigators training classes.</p> <p>4 Q Okay. How many of those training classes 5 did you go to with the IAAI or NAFI?</p> <p>6 A I've been to several week-long classes and 7 seminars with -- with both organizations and then a 8 great number of hours of online training.</p> <p>9 Q Okay. Is your online training represented 10 in this CV?</p> <p>11 A I don't believe it is specifically 12 represented there.</p> <p>13 Q Okay. Do you know approximately how many 14 hours you spent online learning about arc mapping?</p> <p>15 A Specifically about arc mapping, I couldn't 16 say.</p> <p>17 Q Okay. Is there any specific classes that 18 you took that you would have obtained a certificate 19 regarding arc mapping?</p> <p>20 A Yes. I obtained certificates for all of 21 the online courses.</p> <p>22 Q Okay. And do you have those in your 23 possession somewhere?</p> <p>24 A I do not have them with me today.</p> <p>25 Q No, I understand. But those are things</p>
<p style="text-align: right;">Page 11</p> <p>1 training in 2014?</p> <p>2 A Correct.</p> <p>3 Q And again, I don't mean to say that there's 4 not --</p> <p>5 MR. MORGAN: We can take this down.</p> <p>6 Q (By Mr. Morgan) I'm not meaning to say 7 that there's not applicable science and that 8 translates between what you're doing here and 9 otherwise.</p> <p>10 But specifically for arc mapping and the 11 forensics, that would have started when you worked at 12 Rimkus?</p> <p>13 A Correct.</p> <p>14 Q And when you worked at Rimkus, did you work 15 with Mr. Filas?</p> <p>16 A I did work with Mr. Filas (pronouncing).</p> <p>17 Q How long did you -- and I apologize for 18 saying his name wrong.</p> <p>19 How long did you work with Mr. Filas?</p> <p>20 A Approximately five years.</p> <p>21 Q Is Mr. Filas the one who specifically 22 trained you in arc mapping?</p> <p>23 A I certainly received some training from Mr. 24 Filas. I also worked with other engineers at Rimkus. 25 I learned -- I also -- I also learned aspects of arc</p>	<p style="text-align: right;">Page 13</p> <p>1 that you could retrieve -- if we asked you for online 2 certifications regarding arc mapping, that's something 3 that you would be able to find?</p> <p>4 A Yes.</p> <p>5 Q Okay. As far as the IAAI arc mapping work, 6 did you receive a certificate for that class?</p> <p>7 A Yes. I have certificates -- I have 8 certificates for all of the fire investigative 9 training courses, both in person and online, that I've 10 attended.</p> <p>11 Q So when you went to these fire 12 investigative courses, did you -- were they in total 13 fire investigation or were they specific to arc 14 mapping?</p> <p>15 A Most of them would be total fire 16 investigation.</p> <p>17 Q Could you give us the history of arc 18 mapping, please: when was it created and how it's 19 advanced from its creation to today.</p> <p>20 A I couldn't tell you the history of the 21 subject.</p> <p>22 Q Okay. And looking at Plaintiffs' Exhibit 23 A, I don't see any references to any peer-reviewed 24 studies regarding arc mapping.</p> <p>25 Are there some that you have not provided</p>

4 (Pages 10 - 13)

<p style="text-align: right;">Page 22</p> <p>1 every inch of the fire-damaged conductors, both 2 visually and tactically with fingers, myself and other 3 investigators that were participating, to look and 4 feel for evidence of electrical arcing.</p> <p>5 Q Okay. I want to break that down. So when 6 you say that you physically traced, you went to the 7 circuit breaker, correct?</p> <p>8 A Correct.</p> <p>9 Q And where was the circuit breaker in this 10 home?</p> <p>11 A The main circuit panel was located in the 12 basement below Bedroom 4.</p> <p>13 Q Okay. As far as the extension cords and 14 the entire branch circuit for Bedroom 4, were those 15 all connected to that breaker panel in the basement?</p> <p>16 A Yes. Every -- the two circuits that were 17 collected, the circuit that served Bedroom 4 and the 18 circuit that served the outside receptacle, both of 19 those circuit breakers were located in that main 20 electrical panel.</p> <p>21 Q Okay. And on the scene, in relation to the 22 branch circuit for Bedroom 4, you were able to remove 23 those; but you did not inspect them at the scene for 24 evidence of arcing, correct?</p> <p>25 A Are you speaking about the breakers</p>	<p style="text-align: right;">Page 24</p> <p>1 referring to that fed the outdoor receptacle were in 2 an area just outside of where we had direct fire 3 damage.</p> <p>4 Q Okay. As far as collection of other branch 5 circuits, other than the ones for Bedroom 4, was that 6 done?</p> <p>7 A No. There were no other branch circuits 8 collected within the house.</p> <p>9 Q Was Bedroom 4 the only room that had fire 10 damage within the home?</p> <p>11 A It was not.</p> <p>12 Q Is there a reason that the other branch 13 circuits were not collected?</p> <p>14 A Yes: It was determined by the fire 15 investigators at the scene that those other rooms were 16 outside of the area of origin as they determined it 17 for the fire; and, therefore, we did not collect those 18 circuits.</p> <p>19 Q Fair to say, then, that based off the fact 20 that those circuits were not collected for the 21 physical lab inspection, that you are unable to tell 22 us whether or not those circuits outside of Bedroom 4 23 were energized at the time the fire reached the room?</p> <p>24 A You're speaking about the individual -- other 25 individual rooms in the house?</p>
<p style="text-align: right;">Page 23</p> <p>1 themselves?</p> <p>2 Q I mean the branch circuit that you removed.</p> <p>3 A That is correct.</p> <p>4 Q Also, is it fair to say that based off the 5 pictures that you took, that the -- there was minimal, 6 if any, fire damage within the basement area of the 7 Wadsworth home?</p> <p>8 A That is correct.</p> <p>9 Q You also recovered the extension cords that 10 were running to the shed outside of Bedroom 4, 11 correct?</p> <p>12 A Yes, we did.</p> <p>13 Q Did you retrieve any of the branch 14 circuitry into which those extension cords were 15 plugged into?</p> <p>16 A We retrieved some of that. We traced out 17 those lines. We retrieved some of it. Some of it was 18 non-fire damaged and very well encased in the wall.</p> <p>19 Q Okay. Being encased in walls is important 20 in arcing, correct, arcing evaluations? Is that fair?</p> <p>21 A It can be.</p> <p>22 Q Well, walls and insulation generally 23 provide some protection versus a stranded line, 24 correct?</p> <p>25 A They can. In this case, the conductors I'm</p>	<p style="text-align: right;">Page 25</p> <p>1 Q Correct. Yes, sir.</p> <p>2 A I cannot speak to -- I cannot speak to what 3 condition those conductors are in. However, based on 4 the information that we did -- we did find during the 5 arc mapping, I believe that those circuits were all 6 de-energized by the time the fire got to them.</p> <p>7 Q Okay. But you did not inspect those to be 8 able to give us an opinion here today that you believe 9 they were de-energized because of lack of arcing, 10 correct?</p> <p>11 A Correct. I did not physically inspect 12 those other conductors.</p> <p>13 Q And in the same vein, you did not trace 14 each physical conductor back to the circuit breaker; 15 is that fair?</p> <p>16 A The other -- from the other parts of the 17 house, that is correct.</p> <p>18 Q Okay. So when we talk about tracing the 19 circuit breaker, we are limiting that to Bedroom 4 and 20 the extension cords that were in the shed outside of 21 Bedroom 4; is that fair?</p> <p>22 A Correct. We are limiting it -- we are 23 limiting it to the area -- the potential areas of 24 origin identified by the fire investigators.</p> <p>25 Q Okay. When we go back to your training and</p>

<p style="text-align: right;">Page 26</p> <p>1 experience, education or work-wise, will you tell me 2 your background in metallurgy and where that has come 3 from.</p> <p>4 A Those were -- that is from some basic 5 materials science classes during my undergraduate 6 education.</p> <p>7 Q Okay. And beyond that, there's no master's 8 or Ph.D. that has been left off or is in process right 9 now; is there?</p> <p>10 A No.</p> <p>11 Q Okay. Take me through the process of once 12 we get to the lab, how it was that you were able to -- 13 let me strike that.</p> <p>14 Take me through the process of when you got 15 to the lab of what you did to look for the presence of 16 arcing.</p> <p>17 A Sure. As I previously stated, we went -- 18 went through every inch of the fire-damaged 19 conductors, both visually and tactically, by hand, to 20 look for evidence of arcing.</p> <p>21 Q When we talk about the fire damage 22 conductors, is it fair to assume that every conductor 23 within Room 4 is included in that?</p> <p>24 A When I speak about the fire-damaged 25 portions, I'm referring to the portions of the</p>	<p style="text-align: right;">Page 28</p> <p>1 being directly attacked by the fire.</p> <p>2 Q Okay. And how is that determination made?</p> <p>3 A The determination as to whether the wires 4 are burned or not?</p> <p>5 Q Yeah. Whether they're burned to the level 6 that would be impacted by the fire.</p> <p>7 A In many cases here -- or in some cases, I 8 should say, when I say, "intact insulation," I mean 9 that the wire has not -- has not been burned. It 10 might be partially discolored, but it is intact.</p> <p>11 Q Meaning it has its outside insulation cover 12 on it?</p> <p>13 A Correct.</p> <p>14 Q And when you talk about the loss of 15 insulation, you're talking about seeing an actual 16 metal wire; is that fair?</p> <p>17 A That is fair.</p> <p>18 Q And so do you trace the -- did you trace 19 the wire into the point where you found intact 20 insulation on these -- in Bedroom 4, when you were 21 collecting the samples?</p> <p>22 A We traced out the entire circuit, including 23 those portions.</p> <p>24 Q Okay. But I'm saying, Were you -- but you 25 eventually decided to gather some, correct?</p>
<p style="text-align: right;">Page 27</p> <p>1 circuits that have the insulation burned on them. 2 There were portions buried in the walls that had 3 intact insulation.</p> <p>4 Q So when we're talking about the entire 5 circuit, you did not take the entire branch circuit 6 from Bedroom 4; you only took the portions that you 7 deemed potentially worthy of further investigation.</p> <p>8 Is that fair?</p> <p>9 A No, that is not correct. The entire branch 10 circuit was collected. However, the portions of the 11 conductors that still had intact wiring insulation 12 were not cut open and examined.</p> <p>13 Q Why not?</p> <p>14 A Because there was no evidence that there 15 was a fire there.</p> <p>16 Q In Bedroom 4, there was no evidence of fire 17 in some of those walls?</p> <p>18 A There was no evidence that there was fire 19 at the unburned electrical insulation on the 20 conductors.</p> <p>21 Q Okay. Will you explain that to the Court, 22 please.</p> <p>23 A Sure. The -- when we -- when we find 24 portions of the wire that have unburned insulation, 25 that is consistent with those portions of the wire not</p>	<p style="text-align: right;">Page 29</p> <p>1 A We gathered the entire branch circuit for 2 Bedroom 4.</p> <p>3 Q Okay. Did you have to cut wires that 4 were -- when it's still connected within the wall that 5 you didn't take, you had to cut it at some point, 6 right?</p> <p>7 A No. We did not cut any of the wires. We 8 cut the wall around it to take the wires.</p> <p>9 Q Okay. And so some of the -- every portion 10 that -- every portion of the wire that you saw had 11 damage to its insulation was taken all the way back 12 to -- from the circuit breaker; is that right?</p> <p>13 A The entire -- the entire branch circuit 14 that was within Bedroom 4, whether the insulation was 15 damaged or not, was taken intact. That was traced 16 down to a junction box in the basement, adjacent to 17 the main electrical panel.</p> <p>18 That was an area where we had no fire 19 damage. And the decision was made to cut the 20 conductors there and collect them.</p> <p>21 Q Okay. So that's where -- that's where it 22 ends, at least for our evaluation here, of what you 23 were able to examine?</p> <p>24 A Yes.</p> <p>25 Q Okay. So when you say "we" determined, who</p>

<p style="text-align: right;">Page 46</p> <p>1 did not reach adequate temperature to trip those 2 circuit breakers, because none of the circuit breakers 3 were tripped.</p> <p>4 Q (By Mr. Morgan) Okay. However, the 5 failure of a circuit breaker to trip during a fire 6 does not conclusively mean that the house was not 7 energized during the time of the fire.</p> <p>8 Is that fair?</p> <p>9 A That is correct.</p> <p>10 MR. LaFLAMME: Mike, are you at an okay 11 point to take a quick break?</p> <p>12 MR. MORGAN: Sure. That's great.</p> <p>13 THE VIDEOGRAPHER: The time is 10:05. We 14 are off the record.</p> <p>15 (Recess taken.)</p> <p>16 THE VIDEOGRAPHER: The time is 10:14. We 17 are back on the record.</p> <p>18 Q (By Mr. Morgan) Okay. Let's turn back to 19 the arc mapping process that's laid out in NFPA 921.</p> <p>20 Are you -- that's what you followed, 21 correct?</p> <p>22 A That is correct.</p> <p>23 Q And specifically, we've gone over the fact 24 that the arc mapping that was done for this case 25 was -- within the residence, was just Bedroom 4,</p>	<p style="text-align: right;">Page 48</p> <p>1 A As I just stated, we determined that it 2 would be better to collect the circuits whole and look 3 for evidence of arcing in a more controlled setting.</p> <p>4 Q Okay. You do realize that that departs 5 from the recommendations of NFPA 921 that you have 6 cited in your report and this deposition; true?</p> <p>7 A I do not believe it does.</p> <p>8 Q Okay. If it specifically says that is what 9 you should do, you do not agree that that is what NFPA 10 921 states, correct?</p> <p>11 A I'm not disagreeing with what NFPA 921 12 states. I'm saying it was determined by the 13 investigators, myself included, in this instance, that 14 it would be better to do that in a controlled 15 environment.</p> <p>16 Q Well, there's no reason you cannot do both, 17 right?</p> <p>18 A We believed that it would not be productive 19 to do it at the site. We documented where the 20 conductors ran through the site; and we collected them 21 so we could, again, investigate -- examine them in a 22 more controlled environment.</p> <p>23 Q I understand that in a laboratory, it is 24 more controlled. And NFPA actually provides for that, 25 right?</p>
<p style="text-align: right;">Page 47</p> <p>1 right?</p> <p>2 A Correct.</p> <p>3 Q The NFPA 921 on electricity and fire, the 4 process where this is described, talks about that you 5 need to systematically examine the circuits' and 6 wires' remains for localized damage to conductors or 7 plug blades.</p> <p>8 Did you do that for Bedroom 4?</p> <p>9 A Yes, we did.</p> <p>10 Q It then says that colored tape or a flag is 11 used to mark arc site locations.</p> <p>12 Did you use any colored tape or flags to 13 mark the locations in the site?</p> <p>14 A Very few of the actual locations of arcing 15 were identified at the site. But those were -- those 16 were marked and collected separately.</p> <p>17 Q Did you attempt to search for arcing 18 locations at the site before the removal of the branch 19 circuit?</p> <p>20 A No. It was determined that that would be 21 better conducted in the laboratory setting.</p> <p>22 Q So there would be no pictures dictating -- 23 or detailing, rather, where you thought potential for 24 arc sites that would need further investigation were 25 at the scene; fair?</p>	<p style="text-align: right;">Page 49</p> <p>1 A Yes.</p> <p>2 Q Ninety-two -- well -- did I freeze or you 3 froze?</p> <p>4 A I'm sorry. It froze up in the middle of 5 what you were saying.</p> <p>6 Q Sorry. I think it was me.</p> <p>7 I said, NFPA 921 actually provides for the 8 process after you do a site determination to collect 9 and review in the lab, if necessary, correct?</p> <p>10 A Yes.</p> <p>11 Q But you chose -- whoever "we" is chose to 12 not do the on-site documentation; fair?</p> <p>13 A It was agreed upon by all of the 14 investigators at the site, representing all of the 15 parties involved, that it would not be productive to 16 attempt to do that at the site and that we could risk 17 damaging or destroying evidence if we -- if we did so.</p> <p>18 Q Is it your position in this deposition that 19 there's a greater risk of destroying evidence by 20 visually inspecting for areas of arcing and labeling 21 it with a flag or tape versus removing it from the 22 scene?</p> <p>23 MR. LaFLAMME: Object to form.</p> <p>24 Go ahead.</p> <p>25 A I'm stating that it was not feasible to --</p>

<p style="text-align: right;">Page 54</p> <p>1 approximately right over the polymer shed. 2 The service triplex was melted and severed 3 during the fire, which is not uncommon. Again, 4 aluminum has a low enough melting temperature that it 5 is common for aluminum to melt in a fire. 6 Once that service triplex melted and was 7 severed, there would no longer be any electrical 8 service to the residence; there would no longer be any 9 electrical energy in any of the branch circuits in the 10 residence. 11 So having evidence of electrical arcing on 12 cords in the shed, we know that fire was present in 13 the shed or at the shed prior to the time that the 14 service triplex was severed; because again, after the 15 service triplex was severed, we would have no 16 electricity to produce arcing. 17 Then the -- 18 Q Okay. 19 A -- the -- once that service triplex was 20 severed, there is no longer -- again, no longer any 21 electrical energy present in any of the branch 22 circuits; so there would be no -- there would be no 23 electrical arcing, there would be no evidence of 24 electrical arcing on any of the other circuits after 25 that.</p>	<p style="text-align: right;">Page 56</p> <p>1 Q So when you say that you believe that 2 because the triplex was melted and you didn't see 3 arcing in Bedroom 4, that means there was no 4 electricity to the home, right? 5 A (No response.) 6 Q Is that right? 7 A I want to make sure I understand exactly 8 what you're stating there. 9 Yes, once the service triplex was melted 10 and severed, there was no more electrical power to the 11 home. 12 Q Right. But what I'm saying is: Because 13 you only arc mapped two places, Bedroom 4 and the 14 shed, you cannot tell anyone that there was not 15 electricity in the home at the time that the service 16 triplex melted, because you don't have any evidence 17 yourself, right? 18 MR. LaFLAMME: Object to form. 19 A So if I understand what you just asked me, 20 you're saying -- you're saying that I cannot determine 21 that there was no electrical power in the home when 22 the service triplex melted. And that is incorrect. 23 Q (By Mr. Morgan) Correct. 24 A When the service triplex melted, there was 25 no longer any electrical energy in the home.</p>
<p style="text-align: right;">Page 55</p> <p>1 Q Okay. We've already discussed that you are 2 not able to give us an opinion as to whether or not 3 there was electrical arcing on any conductors or 4 circuits other than in Bedroom 4 within the residence; 5 true? 6 A Correct. 7 Q If that is true, then whether or not the 8 fire originated inside or outside of the house, that 9 can't be told simply by the electrical arcing on a 10 power cord or an appliance cord, correct? 11 A While I -- while I -- my scope was not to 12 look for or determine a specific area of origin. 13 Again, I used the arc mapping as a tool to show 14 evidence of fire spread. 15 So this can provide a timeline. I can -- 16 from the physical evidence, we know that there was 17 fire at the shed before there was fire in the bedroom, 18 Bedroom 4. 19 Q Let's stop right there. How do we know 20 that? 21 A Sure. I'll go through it again. 22 Q No. I mean, here's where I'm having 23 trouble, right: We know that you did not arc map the 24 entire home, correct? 25 A That is correct.</p>	<p style="text-align: right;">Page 57</p> <p>1 Q Okay. That part is true. But whether or 2 not Bedroom 4 was on fire before that cannot be 3 stated, right? 4 A No, I don't believe -- I don't believe 5 that's true. 6 Q Okay. Well, let's walk through it, 7 because -- was there electrical arcing in the kitchen? 8 A We do -- we do not have -- we do not have 9 evidence, as we just went through. We looked at 10 Bedroom 4 and we looked at the area outside of Bedroom 11 4, in the area -- in the area where the fire 12 investigators involved in this matter determined their 13 potential areas of origin to be. 14 Q I'm just -- I'm going to go through it, 15 because you're making big assumptions. And I want to 16 go through piece by piece for the Court to be able to 17 determine the validity of this methodology. So please 18 just bear with me on the piece-by-piece analysis. 19 At the time that the fire got to the 20 kitchen, is there any evidence that you have as to 21 whether or not there's electrical arcing on any of 22 those outlets? 23 A In the kitchen? 24 Q Yes. 25 A No.</p>

15 (Pages 54 - 57)

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<p style="text-align: right;">Page 58</p> <p>1 Q Do you have any evidence as to whether 2 there is or is not arcing within the master bedroom of 3 the Wadsworth home at the time of the fire?</p> <p>4 A I do not.</p> <p>5 Q Do you have any evidence as to whether or 6 not there is electrical arcing in the living room --</p> <p>7 A I do not.</p> <p>8 Q -- in the Wadsworth home?</p> <p>9 When we talk about electrical and power 10 cords and appliance cords, those are what are referred 11 to as stranded, correct, stranded cords?</p> <p>12 A I'm sorry. You broke up a little there. Did you say, "stranded cords"?</p> <p>13 Q Correct. Yes, sir.</p> <p>14 A Yes.</p> <p>15 Q Okay. And how are stranded cords different 16 from the branch circuits in Bedroom 4?</p> <p>18 A The branch circuits in Bedroom 4, as with 19 typical construction, are conducted -- are constructed 20 with solid conductors, where it is -- each conductor 21 is one solid piece of copper.</p> <p>22 The stranded conductors, each conductor is 23 composed of many smaller copper wires.</p> <p>24 Q Okay. And what about the insulation 25 generally on stranded cords versus branch circuits</p>	<p style="text-align: right;">Page 60</p> <p>1 A They were copper.</p> <p>2 Q But you're unable to tell us specifically 3 what they're from? Did you find other remnants that 4 could be connected to them, or no?</p> <p>5 A We did not -- we did not find sections that 6 we believed we could connect together with any 7 certainty.</p> <p>8 MR. MORGAN: If we can pull up what is --</p> <p>9 the document is called 2018 Fire Tech Arc Mapping.</p> <p>10 MR. CURRAN: Yes, sir.</p> <p>11 Q (By Mr. Morgan) Okay. This is an article 12 that was published in Fire Technology.</p> <p>13 Are you familiar with Fire Technology?</p> <p>14 A I am.</p> <p>15 Q Is Fire Technology also a peer-reviewed 16 journal?</p> <p>17 A I believe that it is.</p> <p>18 Q Do you subscribe to Fire Technology?</p> <p>19 A I do not.</p> <p>20 Q What publications do you subscribe to to 21 stay up to date on the latest in fire investigation?</p> <p>22 A I do not currently subscribe to any 23 printed publica- -- printed publications aside from 24 Fire and Arson Investigator Magazine. Most of -- most 25 of the information I get these days is now published</p>
<p style="text-align: right;">Page 59</p> <p>1 used in home construction?</p> <p>2 A It depends entirely on the cord. The 3 insulation can be the same or it can be composed of a 4 different material.</p> <p>5 Q Isn't it true that most power cords on 6 stranded wires are made up of a single layer of 7 insulation?</p> <p>8 A Well, if we're talking about a power 9 cord -- well, it depends. There are some power cords 10 that contain a single layer of insulation.</p> <p>11 There are other cords, such as extension 12 cords, specifically the extension cords in this 13 matter, where there is individual insulation around 14 each conductor and then there's an outer jacket that 15 is also insulation.</p> <p>16 Q Where you found evidence of arcing within 17 the shed, which conductors did you find arcing on?</p> <p>18 A We found arcing on fragments of conductors 19 that were located in the shed.</p> <p>20 Q Okay. Explain.</p> <p>21 A So these were short sections of wire that 22 were in the shed, that were severed from whatever cord 23 that they were originally part of prior to the fire.</p> <p>24 Q And what were they made of? What type of 25 metal were these fragments?</p>	<p style="text-align: right;">Page 61</p> <p>1 online.</p> <p>2 Q As are these. I mean, are you a member of 3 Fire Technology online?</p> <p>4 A I am not.</p> <p>5 Q What about the National Academy of Forensic 6 Investigators?</p> <p>7 A Do you mean the National -- I'm sorry. Could you restate that.</p> <p>9 Q Yeah. From the -- well, let me ask you 10 this: You get it mostly online. Which journals do 11 you subscribe to online dealing with fire 12 investigation and technology?</p> <p>13 A I subscribe to Fire and Arson Investigator 14 through the International Association of Arson 15 Investigators.</p> <p>16 Q Any other ones?</p> <p>17 A No specific subscriptions.</p> <p>18 Q Oh. I thought there were more; because you 19 said you got that one on paper, but you got most of it 20 online.</p> <p>21 But there's no other online ones that you have?</p> <p>23 A I certainly -- I certainly get other information online. I don't have subscriptions per se.</p>

<p style="text-align: right;">Page 62</p> <p>1 Q For the peer-reviewed -- most of the 2 peer-reviewed articles have subscriptions, right? 3 A I don't know that I could answer whether 4 most peer-reviewed articles have subscriptions or not. 5 Q Okay. Are there any that you're -- that 6 you don't need a subscription to that you regularly 7 receive and review? 8 A I don't know that I do offhand, no. 9 Q Okay. This is -- the title of this is Arc 10 Mapping and Critical Review. 11 You've never read this before, correct? 12 A I -- I couldn't say if I've read this 13 article or not. I don't recall. 14 Q Okay. Well, this isn't one that you said 15 that you considered and discounted when talking about 16 the critiques of fire -- of arc mapping, right? 17 A I did not cite this article. 18 Q Okay. Are you familiar with Vytenis 19 Babrauskas? 20 A Yes, I am. 21 Q How are you familiar with him? 22 A He has authored a number of publications, 23 most -- most notably one entitled the Ignition 24 Handbook. 25 Q Okay. Do you consider him to be an</p>	<p style="text-align: right;">Page 64</p> <p>1 A I think -- I think we're getting crossed up 2 here. 3 Q Okay. Let me be very clear. 4 A Yes. 5 Q What he's saying is that these next three 6 things are not true, that it is -- people have assumed 7 it within science, but he does not believe these to be 8 true. 9 And one of the things that he does not 10 believe to be true is that an abundance of arc beads 11 at a given locale means that fire originated in that 12 area, while a paucity of arc beads indicates that it 13 did not. 14 He does not believe that is true. Do you 15 agree with him? 16 A I'll state my answer more clearly: I agree 17 with the author that that statement is not true. 18 Q Okay. Thank you. That was a weirdly 19 worded question. So I apologize. 20 Do you also agree that the following 21 statement is not true: When multiple arcs are present 22 on a circuit, the direction of arcing will necessarily 23 proceed upstream towards the power source? 24 A I also agree that that statement is not 25 true.</p>
<p style="text-align: right;">Page 63</p> <p>1 authority within the fire investigation world? 2 A I consider him to be a knowledgeable 3 individual. 4 Q Sure. 5 MR. MORGAN: If we can go -- well, first, 6 let me ask you this: If we go down to -- it's page 29 7 of 33. It's 776 in the journal. 8 Q (By Mr. Morgan) If we go -- if we look at 9 these hypotheses, he says, The following hypotheses 10 are not supported by science or reliable experimental 11 data; that is, they are myths. 12 And what I want to ask you is -- I'm going 13 to go through each one and ask if you have any 14 peer-reviewed literature or based off your knowledge, 15 training, experience, or otherwise believe that he is 16 wrong. 17 One: An abundance of arc beads at a given 18 locale means that fire originated in that area, while 19 a paucity of arc beads indicates that it did not. 20 Do you believe that to be false? 21 A I do not. 22 Q Do you think that is true? 23 A I believe that is a true statement. 24 Q So even though Mr. Babrauskas says that 25 that is a myth, you actually believe that is true?</p>	<p style="text-align: right;">Page 65</p> <p>1 Q Okay. He goes on -- I don't think 3 is 2 applicable to us. 3 But he goes on, and he says, In fire 4 investigation reports, it is not acceptable for an 5 investigator to report that a conclusion was based 6 simply on arc mapping. 7 Do you agree with that? 8 A If we're talking -- if we're talking about 9 the origin and cause of a fire as a whole, when we're 10 talking about in fire investigation reports, then, 11 yes, I would agree that it is -- it would not be -- it 12 would not be ideal for an investigator to report 13 solely based on arc mapping. 14 Q Okay. He also says -- goes on to say, 15 There are few circumstances where arc mapping may be 16 utilized in a scientifically reliable manner. 17 Do you agree with that? 18 A I certainly agree that there are 19 circumstances where arc mapping may be utilized in a 20 scientifically reliable manner. 21 Q And he says that in order to do that, a 22 fire investigator wishing to rely on arc mapping in a 23 fire investigation report must explicitly set forth a 24 valid governing hypothesis and demonstrate how the 25 analysis comports with that hypothesis.</p>

<p style="text-align: right;">Page 70</p> <p>1 not statistically based, involve dissimilar facts, and 2 are subjective.</p> <p>3 My question to you is: First off, what is 4 a statistically significant experiment? What does 5 that mean?</p> <p>6 A A statistically significant experiment -- 7 MR. LaFLAMME: Object to form.</p> <p>8 Go ahead.</p> <p>9 A A statistically significant study would 10 involve a sufficiently large sample size to show that 11 there actually is a correlation between two or more 12 variables.</p> <p>13 Q (By Mr. Morgan) Okay. Are you aware of 14 any studies that have been done that do support -- 15 that are statistically significant relating to arc 16 mapping?</p> <p>17 A I don't -- I don't know that I have a 18 specific example for you.</p> <p>19 Q Okay.</p> <p>20 MR. MORGAN: All right. We can take that 21 down.</p> <p>22 Q (By Mr. Morgan) Let's go back to your 23 conclusions. And we've talked about 2 and we've 24 talked about 4. I want to talk about the -- No. 3.</p> <p>25 MR. MORGAN: If we can pull that back up.</p>	<p style="text-align: right;">Page 72</p> <p>1 the residence. 2 Therefore, any electrical arcing that 3 occurred to those conductors in the shed, which was 4 plugged into extension cords, powered by the 5 residence, for there to be evidence of electrical 6 arcing in the shed, that had to have happened prior to 7 the time that the service triplex was severed.</p> <p>8 Q Okay. I do -- I believe I understand. But 9 let me ask you a hypothetical: Hypothetically, if we 10 had a fire in Bedroom 4, coming out of the window, 11 could that also cause the aluminum to melt and 12 disconnect power from the home?</p> <p>13 A Any fire present at the service triplex 14 could cause the aluminum to melt and sever the 15 service to the residence.</p> <p>16 Q Okay. And so going specifically to A: 17 What we are basing the fact that the fire must have 18 come from the shed is that we have the presence of 19 arcing on the wire fragments and we do not have the 20 presence of arcing in Bedroom 4?</p> <p>21 A No. That's not what I'm stating in 3a. 22 What I'm stating -- what I'm stat- -- 23 Q Okay. I'm still lost. 24 A I'm sorry. Go ahead. 25 Q Go ahead.</p>
<p style="text-align: right;">Page 71</p> <p>1 Q (By Mr. Morgan) Okay. No. 3 says -- we'll 2 take it in two parts -- The physical evidence 3 presented by the electrical system at the Residence 4 was consistent with: A, Fire being present at or 5 within the polymer Smoking Shed prior to the time that 6 the fire severed the overhead service triplex to the 7 Residence.</p> <p>8 So let's start just with that. The 9 evidence that that is based off is the arcing found on 10 the metal fragments within the shed, correct?</p> <p>11 A Yes, on the conductor fragments in the 12 shed.</p> <p>13 Q As well as the lack of arcing in Bedroom 4, 14 correct?</p> <p>15 A Well, when we're -- when we're speaking 16 specifically about Conclusion 3a, when I say fire 17 being present at or within the polymer smoking shed 18 prior to the time that the fire severed the overhead 19 service triplex to the residence, I'm not -- I'm not 20 making that statement based on anything that was or 21 was not found in Bedroom 4.</p> <p>22 I'm making that statement simply based on 23 the fact that the service triplex was severed; and 24 after the time that that service triplex was severed, 25 there was no longer any electrical energy supplied to</p>	<p style="text-align: right;">Page 73</p> <p>1 No, I'm still -- I'm just having trouble 2 figuring out what other elements are considered there, 3 so I want to -- I'm trying to understand it. I'm 4 sorry.</p> <p>5 A Sure. Sure. Conclusion 3a is very simple: 6 There was evidence of arcing, electrical arcing, on 7 conductor fragments in the shed. That could only 8 occur if there was electrical energy present, if the 9 electrical service to the residence was still intact.</p> <p>10 The service triplex to the residence, which 11 supplies all of the electrical power to the residence, 12 was severed during the fire. It was melted and 13 severed.</p> <p>14 After the time that that service triplex 15 was severed, there was no longer any electrical energy 16 in the building and there was no possibility of 17 electrical arcing on conductors powered by the 18 building.</p> <p>19 So all I'm saying in Conclusion 3a is that 20 the arcing occurred on the conductors within the shed 21 prior to the time that the overhead service triplex 22 was severed.</p> <p>23 Q How do you determine that there was not 24 fire inside the residence and fire in the shed at the 25 same time?</p>